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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,174	09/15/2003	John Santhoff	30287-111	2822

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CARLSBAD, CA 92008

EXAMINER	
JAGANNATHAN, MELANIE	

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/663,174	SANTHOFF ET AL.	
	Examiner	Art Unit	
	Melanie Jagannathan	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *9/15/2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

- Examiner has considered Amendment after Non-Final mailed 6/12/2006.
- Claims 11-28 are pending.

Drawings

1. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 11-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al. US 6,754,195 in view of Richards et al. US 7,079,827.

Regarding claim 11, the claimed first transceiver structured to communicate at a first data rate is disclosed by Webster et al. by a mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and a single carrier receiver (Figure 2, element 207). The claimed second transceiver structured to communicate at a second data rate is disclosed by Webster et al. by the same mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and multi-carrier receiver (Figure 2, element 207). The mixed signal devices (elements 103, 105) communicate with each other at different or higher data rates than 802.11b rates and can also be configured with a standard mode to be able to communicate with devices (elements 107, 109) at any one or more of the standard 802.11b rates. See column 5, lines 49-67, column 6, lines 1-40, column 9, lines 20-58. Each mixed signal device (elements 103, 105) contains a transmitter (Figure 16) and a single carrier receiver (element 207) for analyzing preamble of incoming signal and processing incoming signal that is not a mixed mode packet and also contains a multi-carrier receiver (element 209) for processing incoming mixed mode packet. A mixed mode packet has

a header with mixed mode identifier and accommodates communication between the different mixed signal mode devices (elements 103-109) at different or higher data rates. See column 6, lines 44-67, column 7, lines 1-22.

Webster et al. does not disclose the claimed ultra-wideband device, the first and second transceivers in ultra-wideband device structured to transmit and receive ultra-wideband signals. Richards et al. discloses an impulse radio system with two impulse radio transceivers (Figure 9, element 902A, 902B) communicating with one another, each transceiver containing an impulse radio transmitter (element 602) and an impulse radio receiver (element 702). See column 13, lines 24-31. The transceivers communicate using a train of pulses.

At the time the invention was made it would have been obvious to modify the mixed signal devices including the first and second transceivers of Webster et al. with the impulse radio transmitter and receiver of the transceivers in Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more energy efficient. See column 3, lines 1-5.

Regarding claims 12-13, the claimed first data rate between about 1 Kbps to 5Mbps and second data rate is between 5Mbps to about 1Gbps is disclosed by Webster et al. by Barker preamble (Figure 3, element 303) transmitted at 1 Mbps, a Barker header (element 305) transmitted at 1 or 2 Mbps and OFDM symbols (Figure 3, element 307) incorporating payload data transmitted at any selected data rate from among rates of 24, 36, 48, or 54 Mbps. See column 7, lines 23-32.

Regarding claims 14-15, the claimed first transceiver communicates at first data rate and second transceiver kept off until desired is disclosed by Webster et al. by the mixed signal device includes single-carrier receiver (Figure 2, element 207) and multi-carrier receiver (Figure 2, element 209) where switch (element 205) initially provides received signal to single-carrier receiver until if header examination determines it is a mixed packet (as described above) the switch provides it to the multi-carrier receiver. See column 6, lines 44-67, column 9, lines 20-58.

Regarding claims 16, 19, the claimed at least two communication devices, each device structured to transmit and receive using at least two data rates is disclosed by Webster et al. by mixed signal devices (Figure 1, elements 103-109), operating in 2.4 GHz band, communicating with each other at different or higher data rates from each other. Mixed signal devices (elements 103, 105) who communicate with each other at different or higher data rates than 802.11b rates can be configured with a standard mode to be able to communicate with devices (elements 107, 109) at any one or more of the standard 802.11b rates. See column 5, lines 49-67, column 6, lines 1-15, column 9, lines 20-58. The claimed first transceiver structured to communicate at a first data rate is disclosed by Webster et al. by a mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and a single carrier receiver (Figure 2, element 207). The claimed second transceiver structured to communicate at a second data rate is disclosed by Webster et al. by the same mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and multi-carrier receiver (Figure 2, element 207). Each mixed signal device (elements 103, 105) contains a transmitter (Figure 16)

and a single carrier receiver (element 207) for analyzing preamble of incoming signal and processing incoming signal that is not a mixed mode packet and also contains a multi-carrier receiver (element 209) for processing incoming mixed mode packet.

Webster et al. does not disclose the claimed at least two ultra-wideband devices, a master ultra-wideband transceiver to communicate with the at least two ultra-wideband devices and the two ultra-wideband devices transmit a plurality of pulses, each device including first and second ultra-wideband transceivers. Richards et al. discloses an impulse radio system with two or more impulse radio transceivers (Figure 9, element 902A, 902B) communicating with one another, each transceiver containing an impulse radio transmitter (element 602) and an impulse radio receiver (element 702). See column 13, lines 24-31. The transceivers communicate using a train of pulses. Examiner interprets the transceiver (element 902A) can be mounted in a base station as teaching the claimed master ultra-wideband transceiver. See column 13, lines 64-67, column 14, lines 1-8.

At the time the invention was made it would have been obvious to modify the mixed signal devices including the first and second transceivers of Webster et al. with the impulse radio transmitter and receiver of the transceivers in Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more energy efficient. See column 3, lines 1-5.

Regarding claim 17, Webster et al. disclose devices communicating with each other at rates of 1, 2, 5.5, 11 Mbps. See column 6, lines 1-8. Additionally, Webster et al. discloses in mixed mode packet a Barker preamble (Figure 3, element 303)

transmitted at 1 Mbps, a Barker header (element 305) transmitted at 1 or 2 Mbps and OFDM symbols (Figure 3, element 307) incorporating payload data transmitted at any selected data rate from among rates of 24, 36, 48, or 54 Mbps. See column 7, lines 23-32. Webster et al. does not disclose the claimed each of the two data rates are selected from group consisting of 1 Kbps, 5Mbps, 25 Mbps, 50 Mbps, 100 Mbps, 200 Mbps, 400 Mbps, 480 Mbps, 500 Mbps, 1 Gbps. At the time the invention was made it would have been obvious to modify the rates of Webster et al. to be rates disclosed above. One of ordinary skill in the art would be motivated to do this allow for different and higher data rates to be communicated between devices in wireless local area networks.

Regarding claims 18, 27, Webster et al. discloses the claimed determining a communication data rate capability of devices, device transmit request to communicate using only one of data rates is disclosed by Webster et al. incorporating by reference dual packet configuration of U.S. packet application 09/586,571. The dual mode packet configuration allows 802.11b in 2.4 GHz band to coexist with devices communicating at different or greater rates afforded by OFDM. An OFDM mode bit in the header is used by target device for indication of OFDM mode use by another device. See column 1, lines 52-64.

Webster et al. does not disclose the master ultra wideband transceiver. Richards et al. discloses an impulse radio system with two or more impulse radio transceivers (Figure 9, element 902A, 902B) communicating with one another, each transceiver containing an impulse radio transmitter (element 602) and an impulse radio receiver

(element 702). See column 13, lines 24-31. The transceivers communicate using a train of pulses. Examiner interprets the transceiver (element 902A) can be mounted in a base station as teaching the claimed master ultra-wideband transceiver. See column 13, lines 64-67, column 14, lines 1-8.

At the time the invention was made it would have been obvious to modify the mixed signal devices including the first and second transceivers of Webster et al. with the impulse radio transmitter and receiver of the transceivers in Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more energy efficient. See column 3, lines 1-5.

Regarding claim 20, Webster et al. discloses all of the limitations except for the claimed time duration of each pulse ranges from about ten picoseconds to about one millisecond. Richards et al. discloses a sequence of pulses with 0.5 nanosecond pulses (Figures 2A and 2B). See column 7, lines 47-59. At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster et al. with the impulse radio communication of Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more energy efficient. See column 3, lines 1-5.

Regarding claim 21, Webster et al. discloses the claimed OFDM signals is disclosed by devices transmitting OFDM symbols (Figure 3, element 307) incorporating payload data transmitted at any selected data rate from among rates of 24, 36, 48, or 54 Mbps. See column 7, lines 23-32.

Webster et al. does not disclose the claimed at least two ultra-wideband devices. Richards et al. discloses an impulse radio system with two impulse radio transceivers (Figure 9, element 902A, 902B) communicating with one another, each transceiver containing an impulse radio transmitter (element 602) and an impulse radio receiver (element 702). See column 13, lines 24-31. The transceivers communicate using a train of pulses.

At the time the invention was made it would have been obvious to modify the mixed signal devices including the first and second transceivers of Webster et al. with the impulse radio transmitter and receiver of the transceivers in Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more energy efficient. See column 3, lines 1-5.

Regarding claim 22, Webster et al. discloses the claimed low data rate transceiver and high data rate transceiver is disclosed by each mixed signal device (Figure 1, elements 103-109) includes a transmitter (Figure 16) and a single-carrier receiver (Figure 2, element 207) and multi-carrier receiver (Figure 2, element 209) where switch (element 205) initially provides received signal to single-carrier receiver and if header examination determines it is a mixed packet incorporating higher rate (as described above) the switch provides it to the multi-carrier receiver. Examiner interprets low data rate transceiver as transmitter and single carrier receiver and high data rate transceiver as transmitter and multi-carrier receiver. See column 6, lines 44-67, column 9, lines 20-58.

Webster et al. does not disclose the claimed at least two ultra-wideband devices. Richards et al. discloses an impulse radio system with two impulse radio transceivers (Figure 9, element 902A, 902B) communicating with one another, each transceiver containing an impulse radio transmitter (element 602) and an impulse radio receiver (element 702). See column 13, lines 24-31. The transceivers communicate using a train of pulses.

At the time the invention was made it would have been obvious to modify the mixed signal devices including the first and second transceivers of Webster et al. with the impulse radio transmitter and receiver of the transceivers in Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more energy efficient. See column 3, lines 1-5.

Regarding claims 23-24, the claimed wideband device comprising a first transceiver structured to communicate at a first data rate is disclosed by Webster et al. by a mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and a single carrier receiver (Figure 2, element 207). The claimed second transceiver structured to communicate at a second data rate is disclosed by Webster et al. by the same mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and multi-carrier receiver (Figure 2, element 207). The mixed signal devices (elements 103, 105) communicate with each other at different or higher data rates than 802.11b rates and can also be configured with a standard mode to be able to communicate with devices (elements 107, 109) at any one or more of the standard 802.11b rates. See column 5, lines 49-67, column 6, lines 1-40, column 9,

lines 20-58. The claimed determining a communication data rate capability of devices, device transmit request to communicate using only one of data rates is disclosed by Webster et al. incorporating by reference dual packet configuration of U.S. packet application 09/586,571. The dual mode packet configuration allows 802.11b in 2.4 GHz band to coexist with devices communicating at different or greater rates afforded by OFDM. An OFDM mode bit in the header is used by target device for indication of OFDM mode use by another device. See column 1, lines 52-64.

Webster et al. does not disclose the claimed at least two ultra-wideband devices, a master ultra-wideband transceiver to communicate with the at least two ultra-wideband devices. Richards et al. discloses an impulse radio system with two or more impulse radio transceivers (Figure 9, element 902A, 902B) communicating with one another, each transceiver containing an impulse radio transmitter (element 602) and an impulse radio receiver (element 702). See column 13, lines 24-31. The transceivers communicate using a train of pulses. Examiner interprets the transceiver (element 902A) can be mounted in a base station as teaching the claimed master ultra-wideband transceiver. See column 13, lines 64-67, column 14, lines 1-8.

At the time the invention was made it would have been obvious to modify the mixed signal devices including the first and second transceivers of Webster et al. with the impulse radio transmitter and receiver of the transceivers in Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more energy efficient. See column 3, lines 1-5.

Regarding claim 25, Webster et al. discloses the claimed transmitting a beacon signal containing geographic location information by mixed packet signal including preamble with power and timing information associated with the multi-path medium which the signal was propagated from the WLAN device. See column 6, lines 44-55, column 7, lines 10-22.

Webster et al. does not disclose the claimed master ultra-wideband transceiver. Richards et al. discloses an impulse radio system with two or more impulse radio transceivers (Figure 9, element 902A, 902B) communicating with one another, each transceiver containing an impulse radio transmitter (element 602) and an impulse radio receiver (element 702). See column 13, lines 24-31. The transceivers communicate using a train of pulses. Examiner interprets the transceiver (element 902A) can be mounted in a base station as teaching the claimed master ultra-wideband transceiver. See column 13, lines 64-67, column 14, lines 1-8.

At the time the invention was made it would have been obvious to modify the mixed signal devices including the first and second transceivers of Webster et al. with the impulse radio transmitter and receiver of the transceivers in Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more energy efficient. See column 3, lines 1-5.

Regarding claim 26, Webster et al. discloses devices communicating with each other at rates of 1, 2, 5.5, 11 Mbps. See column 6, lines 1-8. Additionally, Webster et al. discloses in mixed mode packet a Barker preamble (Figure 3, element 303) transmitted at 1 Mbps, a Barker header (element 305) transmitted at 1 or 2 Mbps and

OFDM symbols (Figure 3, element 307) incorporating payload data transmitted at any selected data rate from among rates of 24, 36, 48, or 54 Mbps. See column 7, lines 23-32. Webster et al. does not disclose the claimed each of the two data rates are selected from group consisting of 1 Kbps, 5Mbps, 25 Mbps, 50 Mbps, 100 Mbps, 200 Mbps, 400 Mbps, 480 Mbps, 500 Mbps, 1 Gbps. At the time the invention was made it would have been obvious to modify the rates of Webster et al. to be rates disclosed above. One of ordinary skill in the art would be motivated to do this allow for different and higher data rates to be communicated between devices in wireless local area networks.

Regarding claim 28, Webster et al. discloses all of the limitations of the claim except for master ultra-wideband transceiver transmitting shut-down signal to ultra-wideband device. Richards et al. discloses an impulse radio system with two or more impulse radio transceivers (Figure 9, element 902A, 902B) communicating with one another, each transceiver containing an impulse radio transmitter (element 602) and an impulse radio receiver (element 702). See column 13, lines 24-31. The transceivers communicate using a train of pulses. Examiner interprets the transceiver (element 902A) can be mounted in a base station as teaching the claimed master ultra-wideband transceiver. See column 13, lines 64-67, column 14, lines 1-8.

At the time the invention was made it would have been obvious to modify the mixed signal devices including the first and second transceivers of Webster et al. with the impulse radio transmitter and receiver of the transceivers in Richards et al. One of ordinary skill in the art would be motivated to do this since impulse radios are more

energy efficient and transmitting shut-down signal would conserve battery power of device. See column 3, lines 1-5.

Response to Arguments

4. Applicant's arguments with respect to claims 11-28 have been considered but are moot in view of the new ground(s) of rejection. Examiner appreciates detailed description of prior art.

Applicant argues Webster et al. does not disclose a communication device comprising a first transceiver to communicate at first data rate and second transceiver to communicate at second data rate.

Examiner respectfully disagrees. Webster et al. discloses each mixed signal device (elements 103, 105) contains a transmitter (Figure 16) and a single carrier receiver (element 207) for analyzing preamble of incoming signal and processing incoming signal and also contains a multi-carrier receiver (element 209) for processing incoming mixed mode packet. Examiner interprets first transceiver as combination in the one device of transmitter and single carrier receiver. Examiner interprets second transceiver as combination in same device of transmitter and multi-carrier receiver.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached on Monday-Friday from 8:00 a.m.-5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit 2616
August 20, 2006

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